

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPELLANT'S BRIEF

Appellant: Lev Korenevsky
Application #: 10/037,548
Examiner: Shay L Balsis
Art Unit: 1744

REAL PARTY OF INTEREST

Lev Korenevsky

RELATED APPEALS AND INTERFERENCES

N/A

STATUS OF CLAIMS

Claims rejected: 1-4 and 6-9
Claims withdrawn from consideration: 11-17
Claims cancelled: 5 and 10

STATUS OF AMENDMENTS

The supplemental amendment to Claim 1 was entered after the final rejection for purposes of appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

Independent Claim 1 and Dependent Claims 2 – 4 and 6 - 9

The present invention is described by Claim 1. Its advantages are further facilitated by dependent Claims 2 – 4 and 6 – 9. It presents a paint roller frame that firmly retains a removable paint roller sleeve in the working position and does not let any paint to leak inside the sleeve core and the roller cage. Such leak resistance is achieved through several innovations.

The important component of the new design is a detachable outer portion of the roller cage assembly that combines the cylinder surface to support the outer end of the roller sleeve and the outer retaining face. One of the principal innovations of the invention is that this outer portion is attached to the bearing portion of the roller cage assembly via a mating connection imposing a desirable squeeze of the roller cage (Claim 1, Appendix, lines 3 - 22).

Two resilient washers adjacent to both inner and outer sleeve core edges are one more element that further improves the leak-proof characteristics of the roller cage assembly (Claim 2, Appendix, lines 24 - 27). They absorb the core end unevenness eliminating any route for paint leakage from the outer end and also help to impose a steady urge on the core.

The third key component of the invention is an external washer for the bearing assembly which blocks another possible route of paint leakage inside the sleeve core: from the inner end in-between the bearing assembly and the shaft (Claim 3, Appendix, lines 29 - 31).

Usage of the removable outer portion creates preconditions for a design that allows the same roller frame be used with roller sleeves of at least two standard lengths and intermediate lengths (Claim 4, Appendix, lines 33 - 35).

The invention provides a paint roller frame design in which the roller cage is easily disassembled for maintenance and replacement of worn parts, assembled again, and mounted on the shaft with the help of conventional tools (Claim 6, Appendix, lines 37 - 39).

The cylinder surface of the outer annular face of the detachable outer portion creates preconditions for a new design of a clip-on end wig (Claim 7, Appendix, lines 41 - 44) to paint wall corners when both surfaces of a corner are to be painted with the same paint (no brush needed).

A roller frame hook located on the shaft close to the roller cage is used when the roller frame is resting on a grid that is placed in a paint bucket. It allows keeping the roller frame with a conventional U-shaped shaft in the highest possible position above the paint surface (Claim 8, Appendix, lines 46 - 51). As a result, the painter can add more paint to the bucket (and less often!) without the paint roller sleeve soaking the paint.

A plastic sheathing for the portion of the U-shaped shaft adjoining the roller cage assembly eliminates creation of dark marks when this shaft portion occasionally touches the wall (Claim 9, Appendix, lines 53 - 56).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1 - 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Thackara (USPN 2766473).

Claims 1 - 4, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Newman (USPN 3745624).

Claims 1 - 4 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Dezen (USPN 4467509).

ARGUMENT

Introduction

The most notorious nuisance related to painting with a roller frame is paint leakage inside the roller frame cage. Sleeve sliding is the primary cause of leakage in conventional roller frames. A removable end unit with a round face is used in several patents to retain the sleeve on the roller frame cage. This approach significantly reduces leakage, but does not completely eliminate leakage of paint.

Claim 1 is introducing two end units and tells about “said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a mating connection between said portions having characteristics that ensure fast and tight trapping of the core and that prevent weakening of the sleeve squeezing while painting” (Appendix, Claim 1, lines 19 – 22). Such method of sleeve retention results in the prime advantage of my design: its ability to establish firm and permanent squeeze of the roller sleeve by two end units with round faces. No existing patent is capable to provide such squeeze.

Note: Sealing of the interior of the roller sleeve core is further facilitated with the help of two washes urged to both edges of the core (Claim 2, Appendix, lines 24 - 27) and a washer on the shaft (Claim 3, Appendix, lines 27 - 29). However, Claim 1 is providing a strong squeeze needed for Claims 2 and 3 to work. Without such squeeze the washes would not work well and leakage could be just reduced, but not eliminated.

The best way to understand the difference between how the two end units are connected in my invention and in existing patents with removable end units is to perform an easy mental experiment: imagine that you remove both end units (Fig. 3, 110 and 150) from the shaft and connect them without the sleeve. For my design the end units when removed from the shaft and without a sleeve can be connected the same way as they are connected in the presence of the shaft and the sleeve. For other designs this is just impossible. This experiment could be considered as a litmus test for a kind of connection that I used in my design.

Claim 1 (Appendix, line 20) is referring to the term “mating connection” to explain what kind of connection fastens together the end units in my invention. Another valid approach could be to list various possible implementations. However, it would be difficult to cover all possible permutations. Fortunately, there is an established technical term used in similar situations, “mating connection”. Before utilizing this term, the appellant researched the Database of Patents and found that since 1976 “mating connection” was used in 249 patents (USPN 6733313, 6722922, 6511102, and others). These patents always describe two connected parts of an assembly (device, etc.) that would pass the ‘litmus test’ mentioned above. I believe that it is legitimate to rely on the established technical term and expect that any person skilled in the art would understand and interpret it the same way as it was utilized in previously registered patents.

According to my Claim 1 'said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a **mating connection**' (Appendix, Claim 1, lines 19 – 22). These wording adequately represents the basic idea of the invention and clearly separates my claim from other patents. These wording explicitly tells that the end units (Fig. 3, 110 and 150) form a mating connection via the mating means they comprise. This wording clearly excludes any other parts, counting the shaft and the sleeve, as participants in this connection.

A. Rejection under 35 U.S. C. 102(b), anticipated by Thackara.

Claims 1-3 and 6 were rejected under 35 U.S. C. 102(b) as being anticipated by Thackara (USPN 2766473).

The examiner is erroneous when states that Claim 1 is being anticipated by Thackara (USPN 2766473) because the two end units in his design are independently mounted on the shaft (axle, spindle) while in my design the end units are attached to each other via a mating connection.

Indeed, the fact that the two end units in Thackara's design are independently mounted on the shaft (axle, spindle) is clear from the patent drawings and is explicitly stated in the patent wording:

"A hub portion 23 of the cap 16 is rotatably mounted on the axle 13" (USPN 2766473, Page 2, Lines 26 – 27) and "A hub portion 30 of the cap 25 is rotatably mounted on the axle 13" (USPN 2766473, Page 2, Lines 44 – 45).

This means that the end units 16 and 25 are independently mounted on the axle 13 and unlike end units in my Claim 1 do not form a mating connection. Without a shaft or a sleeve nothing would keep them together.

So, Claim 1 is not anticipated, rendered obvious, or suggested by Thackara (USPN 2766473).

Note: It is apparent that Thackara's design, unlike my invention, is unable to achieve a strong permanent squeeze of the roller sleeve. For Thackara's design the shaft is a 'participant' in the squeeze. As a result, when a roller sleeve is squeezed, rotation friction between the spring clamp 37 and the hub portion 30 of the cap 25 (USPN 2766473, Fig. 2) would be significantly increased. This will make rotation of the roller cage obstructed or even impossible due to the action-reaction forces involved in the urge transfer. The basic idea of my invention is to directly connect the end units that squeeze the roller sleeve without any participation from the shaft or the sleeve to avoid the problems explained above.

B. Rejection under 35 U.S. C. 102(b), anticipated by Newman.

Claims 1-4, 6 and 8 were rejected under 35 U.S. C. 102(b) as being anticipated by Newman (USPN 3745624).

The examiner is erroneous when states that Claim 1 is being anticipated by Newman (USPN 3745624) because the two end units in his design are independently mounted on the shaft (axle, spindle) while in my design the end units are attached to each other via a mating connection.

Indeed, the fact that the two end units in Newman's design are independently mounted on the spindle is clear from the patent drawings and is explicitly stated in the patent wording:

“a pair of independent frame units rotatable on a spindle of the paint roller” (USPN 3745624, ABSTRACT, Lines 1 – 3)

This means that these end units do not form a mating connection unlike end units in my Claim 1. Without a spindle or a sleeve nothing would keep them together.

So, Claim 1 is not anticipated, rendered obvious, or suggested by Newman (USPN 3745624).

Note: It is apparent that Newman's design, unlike my invention, is unable to achieve a strong permanent squeeze of the roller sleeve. Indeed, in Newman's design the initial squeeze, if applied by a painter, would entirely rely on friction between the inner surface of the core and the rods 30 and 50 (USPN 3745624, Page 1). This is definitely not sufficient to retain a squeeze during painting. The basic idea of my invention is to directly connect the end units that squeeze the roller sleeve without any participation from the shaft or the sleeve to avoid the problems explained above.

C. Rejection under 35 U.S. C. 102(b), anticipated by Dezen.

Claims 1-4 and 6 were rejected under 35 U.S. C. 102(b) as being anticipated by Dezen (USPN 4467509).

The examiner is erroneous when states that Claim 1 is being anticipated by Dezen (USPN 4467509) because the two end units in his design are independently mounted on the shaft (axle, spindle) while in my design the end units are attached to each other via a mating connection.

Indeed, the fact that the two end units in Dezen's design are independently mounted on the shaft is clear from the patent drawings and is explicitly stated in the patent wording:

“an outer end member rotatably located on said shaft adjacent an outer end” (USPN 4467509, Page 6, Lines 59 – 60).

This means that the end units in Dezen's design are independently mounted on the shaft and unlike end units in my Claim 1 do not form a mating connection. Without a shaft or a sleeve nothing would keep them together.

So, Claim 1 is not anticipated, rendered obvious, or suggested by Dezen (USPN 4467509).

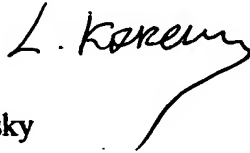
Note: It is apparent that Dezen's design, unlike my invention, is unable to achieve a strong permanent squeeze of the roller sleeve without obstructing rotation of the roller cage. For Dezen's design the shaft is a 'participant' in the squeeze. As a result, when a roller sleeve is squeezed, rotation friction between the outer sleeve 64 and the flange 78 (USPN 4467509, Fig. 3) would be significantly increased. This will make rotation of the roller cage obstructed or even impossible due to the action-reaction forces involved in the urge transfer. The basic idea of my invention is to directly connect the end units that squeeze the roller sleeve without any participation from the shaft or the sleeve to avoid the problems explained above.

Conclusion

The appellant proved that the invention presented by Claim 1 is not anticipated by the prior art. This also proves that the dependent claims 2 – 4 and 6 – 9 are not anticipated by the prior art.

Please call 847-809-8762 or 630-706-4553 to reach me with any questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read "L. Korenevsky", with a long, sweeping underline that extends to the right.

Lev Korenevsky
08/24/2005

APPENDIX (CLAIMS)

Claim 1: A paint roller frame comprising a shaft having a handle portion fixedly secured to a handle and a roller cage assembly mounted on the opposite end of said shaft for supporting a paint roller sleeve thereon, wherein:

said roller cage assembly is generally perpendicular to said shaft's handle portion;

said roller cage assembly comprises a bearing portion and an outer portion which is removable to permit replacement of the roller sleeve;

said bearing portion is mounted on said shaft that is passing through an opening in the bearing portion;

said bearing portion has a supporting surface to support the paint roller sleeve and an annular (inner) face against which an adjacent (inner) end surface of the roller sleeve core can be urged to prevent the paint roller sleeve from axial sliding and to inhibit paint flow into the interior of the core;

said outer portion having a supporting surface to support the paint roller sleeve and an annular (outer) face against which an adjacent (outer) end surface of the roller sleeve core can be urged to prevent the paint roller sleeve from axial sliding and to inhibit paint flow into the core interior;

said bearing portion and said outer portion further comprising mating connection means and, for painting, forming a mating connection between said portions having characteristics that ensure fast and tight trapping of the core and that prevent weakening of the sleeve squeezing while painting.

24 Claim 2: A paint roller frame as claimed in claim 1 further comprising two resilient
25 washers adjacent to said inner and outer annular faces to significantly improve sealing of
26 the core's interior and to create a strain that prevents unscrewing of the outer portion and,
27 therefore, further ensures secure sleeve squeezing during painting.

28

29 Claims 3: A paint roller frame as claimed in claim 1 where said bearing portion further
30 comprises a washer to prevent leaks inside the roller cage assembly along the shaft
31 through said opening in the bearing portion.

32

33 Claim 4: A paint roller frame as claimed in claim 1 where the length of said roller cage
34 assembly is adjustable by repositioning of the roller cage parts allowing usage of the
35 same roller frame with roller sleeves of different lengths.

36

37 Claim 6: A paint roller frame as claimed in claim 1 wherein said roller cage can be
38 removed from the shaft, disassembled for maintenance or replacement of worn parts,
39 assembled again, and mounted on the shaft with the help of conventional tools.

40

41 Claim 7: A paint roller frame as claimed in claim 1 further comprising a clip-on end wig
42 that can be mounted on the cylinder surface of said annular face of the outer end
43 assembly comprising of a cap and a painting portion attached to the cap; said painting
44 portion made of a material similar to the covering of the paint roller sleeve.

45

46 Claim 8: A paint roller frame as claimed in claim 1 with a conventional U-shaped shaft
47 also comprising a hook located near the end of the shaft's handle portion that is close to
48 the paint roller sleeve; such a position of the hook allows the roller frame to be mounted
49 higher on a grid (a paint rack) fastened in a paint bucket; the hook that is located this way
50 keeps the roller sleeve resting above the paint in the highest possible position to let more
51 paint be poured in the paint bucket without the paint roller sleeve soaking the paint.

52

53 Claim 9: A paint roller frame as claimed in claim 1 with a conventional U-shaped shaft
54 also comprising a plastic sheathing for the portion of the metallic shaft of the paint roller
55 frame adjacent to the paint roller cage assembly to eliminate dark marks on walls as a
56 result of occasional touching walls by said portion of the shaft during painting.

① 精神
 ② 责任感
 ③ 自信
 ④ 勇敢
 ⑤ 诚实
 ⑥ 宽容
 ⑦ 勤奋
 ⑧ 谦虚
 ⑨ 坚韧
 ⑩ 乐观
 ⑪ 合作
 ⑫ 尊重
 ⑬ 礼貌
 ⑭ 整洁
 ⑮ 节约
 ⑯ 环保
 ⑰ 健康
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